DOCUMENT RESUME

ED 129 896 TM 005 732

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TITLE Evaluation of Dade County Public School Career Education Program, 1975-76.
INSTITUTION Dade County Public Schools, Miami, Fla. Dept. of Planning and Evaluation.
PUB DATE Jul 76
NOTE 53p.

EDRS PRICE MF-$0.83 HC-$3.50 Plus Postage.
DESCRIPTORS Achievement Gains; Basic Skills; *Career Awareness; *Career Education; *Career Exploration; Comparative Analysis; Cost Effectiveness; *Elementary Education; Elementary Secondary Education; *Junior High Schools; Norm Referenced Tests; Norms; Program Effectiveness; *Program Evaluation; Student Attitudes; Student Testing; Test Results
IDENTIFIERS Dade County Florida Public Schools; Florida (Dade County); Florida Statewide Assessment Program

ABSTRACT

Career Education was introduced to Dade County, Florida schools three years ago. An evaluation was conducted of the elementary school level (Career Awareness) and at the junior high school level (Career Exploratory) during 1974-75. The results of that evaluation, while positive at the elementary level, were inconclusive at the junior high school level. The 1975-76 evaluation was directed primarily at the junior high school program, although the elementary school students who were tested during 1974-75 were again reevaluated to determine whether their gains in career awareness, measured last year, were being maintained. The junior high school students who had participated in the 1974-75 evaluation were similarly reexamined to determine what might be the nature of their trends in career attitudes and knowledge. Unlike the elementary school pupils, they did not attain the national norms in either career attitudes or knowledge in 1974-75. As of February, 1976 they still had not, but they were nearly attaining the norm in career knowledge and they were making moderate advances on the norm in attitudes towards work. The junior high school Career Exploratory pupils showed other moderate gains in 1975-76, as well. Compared to other schools in the county, the state assessment of eighth grade achievement indicated that the Career Exploratory schools were superior to the Dade County averages in reading, occupational information, and mathematics. (Author/MV)

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SUMMARY OF MAJOR FINDINGS AND RECOMMENDATIONS

Career Education was introduced to Dade County schools three years ago. An evaluation was conducted of the elementary school level (Career Awareness) and at the junior high school level (Career Exploratory) during 1974-75. The results of that evaluation, while positive at the elementary level, were inconclusive at the junior high school level. With plans to expand the program on a county-wide basis from the current five junior high schools piloting the program, it was desirable to reevaluate the potential of the career education concept, in order that more definitive consequences of such an expansion might be determined.

The 1975-76 evaluation was directed primarily at the junior high school program, although the elementary school students who were tested during 1974-75 were again reevaluated to determine whether their good gains in career awareness, measured last year, were being maintained. They were, and, in fact, they had increased their status with respect to the national norm for the career awareness test utilized.

The junior high school students who had participated in the 1974-75 evaluation were similarly reexamined to determine what might be the nature of their trends in career attitudes and knowledge. Unlike the elementary school pupils, they did not attain the national norms in either career attitudes or knowledge in 1974-75. As of February, 1976 they still had not, but they were nearly attaining the norm in career knowledge and they were making moderate advances on the norm in attitudes towards work.

The junior high school Career Exploratory pupils showed other moderate gains in 1975-76, as well. Compared to other schools in the county, the state assessment of eighth grade achievement indicated that the Career Exploratory schools were superior to the Dade County averages in reading, occupational information, and mathematics. (These schools were also higher than the Florida eighth grade average for mathematics, but not in the other two categories.)

Students, who had been matched on prior reading achievement, were divided into two groups. The one group which received a career-related language arts curriculum outperformed their counterparts at each of the Career Exploratory junior high schools on the Florida Statewide Assessment Program for ninth grade language arts – not by a great amount, but consistently.

Across the Career Exploratory quins of electronics, graphics, mechanics, sales and marketing, health, home-economics, business, and construction pupils averaged a gain of 13 percentage points on tests designed to measure specific course content, again indicating moderate but tangible program impact.

Program impact was also demonstrated in areas other than test results. School morale items and identification of predominant teaching style items responded to by nearly all Florida eighth grade pupils indicated that Career Exploratory school students more often than students in other schools (a) were aware of and enjoyed the existence of a school attempt to teach occupational information, (b) perceived their teachers as using an individualized/group discussion approach to instruction rather than the lecture approach, and (c) liked their school, its faculty and their peers.

Program impact was also noted in a changing emphasis upon sex-stereotyped career explorations. Boys were entering the previously female home-economics career exploration cluster, while girls were participating in the mechanics and construction clusters.

From the apparent conclusion that career education does have a definite and positive impact upon elementary and junior high students, it is recommended that the Master Plan for expanding the program to all county schools be resumed as soon as possible. Other recommendations include: (a) a reexamination of the method for coordinating all necessary operations implied by the opening of a new school, so that novel programs in novel schools may be totally operable when students and faculty first enter the facilities; and (b) an administrative and program development review of the specific Career Exploratory quins demonstrating neglible gains in the content tests, in terms of their compliance with course objectives, their access to necessary equipment and materiel, and the reading levels of their learning activity packages.

DADE COUNTY PUBLIC SCHOOLS

Division of Finance

EVALUATION OF
DADE COUNTY PUBLIC SCHOOL
CAREER EDUCATION PROGRAM, 1975-76

Prepared by

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July, 1976

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INTRODUCTION

Career Education is a total educational system, kindergarten through post-secondary, consisting of seven components of which four are direct instruction (elementary career awareness, junior high exploratory, senior high career specialization, and post-secondary and adult career specialization) and three are support components (pupil personnel services, staff development and total community resources).

As a concept, career education has gained momentum both locally and nationally. In order to implement this concept, the Dade County Public Schools, three years ago, established pilot programs at seven elementary schools and three junior high schools in the county. The community support of the pilot programs has caused the architectural design of all new junior high schools in this county to facilitate implementation of total career education curriculum including eight career-cluster laboratories and employability skills laboratories. Two of these original prototype comprehensive junior high schools opened in September, 1975. Six new additional junior high schools of this prototype I are scheduled to open in September, 1976. Two additional junior high schools of this prototype I are in the construction stage.

Prototype II of this career education junior high school will be the new Redlands Junior High School for which an architect has been commissioned. The design of this school will broaden the concept capability of Career Education even further, including applied instructional activity centered laboratories for both language arts and mathematics as well as additional career clusters.

The program was developed by the Division of Vocational/Adult Education, which has had the responsibility for the preparation of a comprehensive plan to expand the concept beyond the pilot school phase. The five year Master Plan for the Implementation of Career Education was presented to the School Board on April 30, 1975 and recommended that career awareness and career exploratory programs be implemented in all elemen-

tary and junior high schools. Now concluding its third year of operation under state funds, the direction and rate of expansion in the program must be established for comprehensive planning purposes. One aspect of this planning is the question of the program's potentials for meeting the students' needs for basic skills development and rational career choice decision-making.

The evaluation reported in the following pages is an assessment of these potentials. Such an evaluation was initiated last year. The results of that evaluation, while supportive of the program, were markedly inconsistent and suffered from insufficient time for program effects to be realized. It was suggested, then, that a follow-up study be conducted this year in order to assess program impact under longer program implementation conditions.

Description of the Program

The career education concept was implemented three years ago to equip each high school graduate with the knowledge, skills and attitudes required to allow the option of: continuing education, immediate employment or a combination of continuing education and employment. Other major goals of this system are to retain more students in school through high school graduation, to improve student performance in the basic communication and computational skills, to integrate a career-related curriculum at all levels, and to improve student knowledge and awareness in the field of occupational information and realistic career planning.

The career education curriculum is aimed at the exploration of clusters of occupations in order to bring about tentative selections of careers while learning skills applicable to occupations within the cluster. While general education programs in elementary schools were established to emphasize the basic skills, elementary career education is directed at providing relevancy to the teaching of basic skills by showing their practical application to job skills with career clusters at all levels — semi-skilled, skilled and professional).

The career awareness component at the elementary level consists of a career laboratory consisting of individual "hands-on" student stations equipped with materials, hardware and occupations clothing used by a person engaging in a particular occupation. The student uses a self-instructional learning activity package for each occupational activity, which discusses various characteristics of a given career cluster and instructs the student in the construction of an activity or activities associated with an occupation (e.g.: "Making A Dental Plaster Cast" - one activity of a dental technician). Upon completion of each "hands-on" activity (with the help of a teacher assistant who supervises the laboratory) the student moves to the next station where introduction is made to a new occupation within the cluster. A total of 127 elementary learning activity packages have been developed by elementary classroom teachers and career staff.

At the junior high school level, 8 career clusters have been implemented and are each explored individually within a nine-week quinmester. Each career exploratory laboratory course is taken as an elective, while the student is given rotating "try-on" experiences in various occupations (at individual stations) with a particular cluster and information concerning the nature, training and potential expansion of the occupations within the cluster. As an example, students exploring careers in the Graphic Arts and Allied Occupational cluster will participate in commerical art, printing, drafting, and architecture, which cut across all levels of occupations - professional, technical, skilled and semi-skilled. Over 135 specific activities have been identified, and teachers and career staff have developed 110 individualized learning activity packages (LAPS).

Career-related language arts and mathematics have been developed to provide programs which offer alternatives to traditional instruction in these subjects. Eight language arts and four mathematics career-related quins, including individualized learning activity packages and related "hands-on" experiences, have been developed and are used extensively in the five junior high schools.

This general model was introduced in the following pilot and comprehensive schools:

Elementary Schools (Career Awareness)	Junior High Schools (Career Exploratory)	
Bryan	Robert E. Lee	Pilot
Caribbean	Mays	Pilot
Drew	Rockway	Pilot
Little River		
Orchard Villa	Lake Stevens	New Comprehensive
Parkway	W. R. Thomas	New Comprehensive
Sunset Park		

Description of the Evaluation

Results of the 1974-75 evaluation were least favorable at the junior high school level. The elementary school program demonstrated generally positive consequences for the development of both career awareness and basic skills, whereas the junior high school Exploratory program was, at best, inconsistent in terms of the data it afforded. Accordingly, the major focus of the 1975-76 evaluation was directed to this latter level, in order to establish the potentials of the program given its now greater duration of implementation. Of interest, too, was the chance afforded to determine what additional benefits might accrue from the newly established comprehensive junior high schools, in terms of their impacts on career exploration.

All students who had been members of the 1974-75 career education evaluation sample and who had remained in their school's career education program during 1975-76 were again tested for various concepts and attitudes assumed to be impacted by career education.

At the elementary school level, the students were administered only a test of career awareness.* The results of this norm-referenced

*See the Results section of this report for complete descriptions of the tests used and the procedures followed.

test were compared to the results this sample had previously attained during two periods of the 1974-75 school year – once, prior to participation in career education and a second time following a six-month participation in the program.

At the junior high school level,* students were similarly reassessed with a norm-referenced instrument regarding career education. This sample had been administered the instrument at the same periods of time during 1974-75 as was true of the elementary school sample. The particular test used measured attitudes towards the world of work, one's role in it, and knowledge of career clusters.

The administration of these instruments at the three periods of time provided the opportunity of displaying trends in the development of career knowledge and attitudes, as well as a comparison to national norms. Such displays are presented in the Results section and served as major sources of this report's conclusions regarding program effectiveness.

Additional evaluations at the junior high school level were conducted. Since basic skills improvement through career-related language arts and mathematics programs was a prime objective of the career education development, ninth grade students who had participated in the career-related language arts program during 1974-75 and 1975-76 were matched with other pupils who had not participated in the program in terms of reading achievement prior to program implementation. Following their participation in the project, the two group's scores on the Florida State Assessment of ninth grade reading skills were compared

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*The two comprehensive junior high schools were opened during 1975-76, so students were tested with the instrument in September, 1975 and February of 1976 only. These points in time correspond with the length of time available to the pilot schools last year and provided an interesting comparison for assessing the potential of the comprehensive school impact on career education.

An evaluation was also conducted of eighth grade pupils. In this study, the Florida Eighth Grade Test was used to compare the results of junior high schools involved with career education to other county schools and the state-wide eighth grade averages in language arts, mathematics and occupational information. As part of this study, items selected for their suggestions of program impact on school morale and instructional procedures utilized were compared for the Career Exploratory schools, other Dade junior high schools and the state averages.

An analysis of the amount of knowledge being gained by participation in each of the Career Exploratory quinmesters was also conducted with the junior high school program. "Teacher-made tests" were constructed from an item pool drawn from the objectives of each quinmester cluster. These were administered upon entry to a given quinmester and again upon completion.* The gains made in these tests (percent of items passed) through the pre- to post-test interim were compared to gains made by the same students when they took "inappropriate" tests. "Inappropriate" tests were instruments constructed from items drawn from all the career clusters, and were administered to the students at the same time they took their "appropriate" career cluster tests, i.e., those designed to measure a specific cluster and in which the student was enrolled. (It was assumed that program impact would be apparent if gains were higher in the specific content being taught to a student than the gain in knowledge which he/she showed for clusters where the student was not a participant.)

In yet another component of junior high school evaluation, a questionnaire which had been devised during the 1974-75 evaluation for assessing student attitudes was readministered to the sample in the current evaluation.

Finally, a cost analysis of the total program has been prepared and appears as Appendix A.

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*Actually a matrix-sampling approach was used in these and many other of the tests administered for the 1975-76 evaluation, in order to reduce testing time while preserving program impact evaluation integrity. The procedure is explained in the Limitations of the Study section which follows.

Limitations of the Study

The size of the samples presented with accompanying data in the Results section, while not large, are probably reliable. Since matrix-sampling was utilized, the numbers of actual students represented were, in fact, substantially higher than those posted in many instances. This derived from the nature of matrix-sampling, wherein each student receives only a portion of the test. This portion is then pooled with those contributed by other pupils until a complete test protocol has been constructed. If the test were divided into three segments, for example, and matrix-sampling were utilized, then the numbers shown in the results section (the number of completed protocols) would be one-third the actual number of pupils receiving some portion of the test.

Not all tests and not all schools were matrix-sampled, however. Generally, where the lower numbers are indicated, matrix-sampling was used. Specifically, it was used on the 1976 testing with the elementary school Career Awareness students, the 1976 testing of the Career Exploratory pilot schools for Tables 2 and 3, for the post-testing situation of one of the comprehensive schools in Table 3, and for the cluster tests presentations of Tables 7 and 8. (In these latter, Tables 7 and 8, the actual numbers of students tested are shown.)

The matrix-sampling procedure had considerable merit for reducing testing time per pupil and/or ease of administration. It did, however, result in one instance where too many students inadvertently took the same segment of the test, so that the pooled total protocols equalled only sixteen (Table 3). This number is too small for reliability in the findings, although a suggestion that some credence may be placed in them derives from a comparison of Table 3 results with those of Table 2. The trends are consistent with one another for the data in question (February 1976 testing of the pilot schools students).

A second limitation occurred with respect to the career-related language arts study. Although substantial numbers of pupils participated in the program, great difficulty was encountered in finding matching pupils from the same schools who had had the same prior achievement levels but who did not participate. This resulted in low numbers for two of the schools depicted in Table 6.

A third limitation was one also encountered in the 1974-75 evaluation, and this is the problem of time required for proper implementation of a program. The two comprehensive schools were new this year, which meant logistical difficulties for installation of the career education program. With delayed implementation, the results of program impact should be considered only as tentative in these locales.

In general, however, these limitations would appear as inconsequential to the general conclusions and recommendations presented in the following narrative. The consistency of the data was very high, both within and between Career Education Schools wherever comparisons were made between these and other local, state, or national school situations.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The results of the 1975-76 evaluation tend to suggest that the career education program has been well-conceived and is being implemented in an adequate manner. Students are aware of the program, appear to identify it as a positive feature of their school environment and show gains in their knowledge about various career clusters and an increased cognizance of the appropriate procedures for seeking various careers.

Rather significant changes appear to be taking place with regards to the instructional delivery system as a consequence of career education. Faculty members are providing basic skills instruction through career-related language arts and mathematics programs that are individualized to the students' various educational levels and progress rates. These have resulted in the acquisition of reading skills which were somewhat higher than those attained by matched pupils who received more traditional presentations. They have also resulted in Florida Statewide Test results which were higher than Dade County and state averages in mathematics. This approach has, also, apparently created a classroom atmosphere of greater individual student/teacher and group discussion than in the non-career education schools. (This was evidenced by eighth-grade pupils of career education schools noting less formal lecture presentations and more individually based/group discussion instruction than other eighth-grade pupils whether in Dade County or state-wide.)

The elementary school program was not considered to require the extensive evaluation procedures employed at the junior high school level, since it had demonstrated good potential for meeting its objectives in the evaluation conducted during 1974-75. Rather, the students sampled in that evaluation were again tested to determine how well their trend in developing career knowledge was being maintained and how this trend compared to national averages.

Results of this analysis disclosed that the Dade students were scoring beneath the national average prior to participation in the Career Aware-

ness program (elementary school). Following six months of Career Awareness, the students had surpassed the norm group. Now, a year later, these same pupils have extended the margin somewhat over the norming group, which would suggest a good program impact for imparting career knowledge.

Results, at the junior high school level, of a similar trend analysis were not as positive, but were more encouraging than those noted during the 1974-75 evaluation. At that time very little growth had been demonstrated by junior high school pupils from the time they entered the Career Exploratory program to a point six months later, in terms of a gain in attitudes towards the work world or knowledge of career clusters. They had begun the program beneath national norms and they remained beneath the norms by about the same amount that they had scored initially.

A retesting of these pupils this year, however, indicated that, while they remain beneath the norms, some gains on the norm were true of their attitudes towards work and substantial gains towards the norm for career knowledge were evidenced.

Consistent with these data were the results of other tests administered at this level. The results of the Florida eighth-grade and ninth-grade tests, alluded to earlier, showed that achievement in the basic skills of mathematics and reading (language arts) were being clearly but not spectacularly impacted by the career education program. In the case of mathematics, the Career Exploratory schools not only surpassed the average results of other Dade County schools, but were higher than the Florida average, as well (the reading outcome was higher than the Dade but lower than the state average). The junior high schools with Career Exploration also surpassed the county norms in these tests for occupational information and school morale, although they were still beneath state averages in these areas.

The results of tests designed to assess the actual knowledge gained in each of the exploratory quins are also consistent with a general conclusion that the junior high program is producing moderate but definite impact in the desired objectives. Tests were constructed by the instructional personnel for each of the Career Exploratory quins (electronics, graphics, mechanics, sales and marketing, health, home-economics, business, and construction).

These tests were administered at the beginning and end of each quinmester to evaluate the specific course objectives being realized by the students. Gains made in those tests were compared to gains made on a test which was not related to the course content (but was related to other career exploratory quins).

Students entered their specific quins with an average percent correct on the quin-relevant tests equal to 34 percent, and gained 14 percent in the interim for a final post-test average of 48 percent correct items. For the results on the unrelated test, pupils scored an initial 20 percent correct items, and gained a trivial 3 percent over the same duration. It would, therefore, appear that program impact is occurring, although a final result of less than fifty percent correct would imply that many of the course objectives are not being transmitted adequately.

These test results did suggest that certain quins were meeting their objectives more adequately than others. The Business quin showed a pre- to post-gain of 17 percent, and yielded a final average of 59 percent correct items. At the other extreme, Home Economics quin students concluded their course with only a six percent gain and a final result of 44 percent correct items. The Sales and Marketing group entered their quin with an average of 38 percent of the items correct and gained only 7 percent through the course.

The results also were used to compare the gains being made for boys and girls separately, and to compare the rates being made between the previously established pilot schools and the recently opened comprehensive schools. In the former comparison, boys tended to gain slightly more than girls in the Career Exploration tests; the boys had an average of 2 percent greater gains across all the quins and, generally, within each of the quins.

(It was interesting to discover, while analyzing these data, that career education is having an effect upon sex-sterotyped career explorations. Students of either sex are encouraged to explore all the clusters and, consequently, 125 boys selected the home economics quin – a traditionally feminine province. Girls have "come a long way" towards participating in the previously male-dominated career explorations of mechanics (97 female entrants) and construction (43 girls)).

The latter comparison, Career Exploratory pilot schools versus Career Ex-

ploratory comprehensive schools, disclosed an average gain of 14 percent in the pilot schools and a lower 9 percent gain in the comprehensive schools. The difference, however, appears to be related to implementation rather than program quality. In one of the two comprehensive schools, the career education program was implemented at an earlier point in the 1975-76 year than was true of the second school. Its programs yielded the same average gain as was found in two of the three pilot schools (13 percent). Comparisons of these two school types on the other tests used in this evaluation suggest that the comprehensive schools will likely produce results very similar to those currently realized in the pilot schools. Test results for the one earlier implemented comprehensive school tended to be at or slightly below the average of the pilot schools, whereas the comprehensive school with later program installations scored significantly lower. The disparities between the pilot and comprehensive schools would, thus, appear to be ones related to length of implementation.

Based on current trends, then, both the elementary school and junior high school programs may be expected to produce career awareness, exploration, attitudes and related achievement in the basic skills which will likely surpass state and national norms for many schools. For some of these variables, this has already occurred in the elementary school phase of career education. The junior level appears to be progressing at a more moderate rate but is demonstrating the same trends.

Recommendations

An examination of the cost analysis in Appendix A will disclose that career education is an expensive program to introduce.* Further, it appears an expensive program to maintain. However, the maintenance costs can be largely attributed to the pilot nature of the program. As additional schools adopt the program, the district administrative and program development costs will be apportioned across these additional schools resulting in significantly less per pupil or per school expenditures for the program maintenance phase.

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*Most of the developmental costs have been contributed by the State — these funds are scheduled to be phased out in 1976-77.

Other operating costs are essentially the same as the traditional program—the same formulas are used for supply and equipment allocation.

Space and equipment installation costs are essentially one-time appropriations for each school's adoption of the program and these are expensive. The program effectiveness for increasing basic skills assimilation, for developing good attitudes and knowledge as prerequisites to career selection, and for engendering better school morale do justify the necessary additional costs. The process of expanding the program to additional schools, although impeded somewhat by the current fiscal crisis in public education, should be resumed on a district priority basis as soon as possible.

The test data suggest that some aspects of the program or its plan for expansion require modification for maximal efficiency. In the case of expansion plans, the district has opened school doors before physical plants, the installation of equipment and the availability of materiel are complete. This procedure, although desirable from a space solution standpoint, has potentially self-defeating consequences for the development of maximal instructional outcomes, and the likely consequence of diminished student and faculty morale. The career education program results at the novel comprehensive junior high schools undoubtedly would have been better if the students, upon entering the doors of these plants, had been capable of entering into the fully functional programs they were anticipating. To derive the maximum benefits from the new facilities, then, it is suggested that the physical plant and program planners, the district purchasers, and the area administrators reexamine their procedures for coordinating all logistics of new school openings.

The program, itself, might be improved with increased administrative and developmental attention to the junior high school level. It was noted in the conclusions that the rate of progress, although in a positive direction, has been more moderate for the junior high school Exploratory program than for the Awareness program in the elementary schools. To an extent, this is probably due to a difference in pupil ages and natures of school organization.

On the other hand, the test data suggest there are differential effects occurring among the various Career Exploratory quins. Those showing minimal gains should be thoroughly reviewed for instructional compliance with the objectives, availability of materiel and equipment, and perhaps the readibility of some of the instructional LAPS (approximately thirty percent of the students in the two successive evaluations have indicated some difficulties with the reading level of these materials).

RESULTS

Table 1 presents results attained by the elementary school level Career Awareness program participants on the Laverna M. Fadale Career Awareness Inventory (CAI). The inventory consists of one hundred twenty-five items which are organized into seven sub-tests. The purpose of the inventory is to determine career awareness of elementary school children.

Pupils from seven elementary schools, designated as Career Awareness pilot schools provided the test scores for Table 1. In order to provide data for an analysis of the growth trends in career awareness, students were tested on three separate occasions, September 1974, February 1975, and again in February of 1976.

Mean scores for Career Awareness pilot school participants for the three testing periods are compared in Table 1 to the mean scores of the norming group, sixth grade pupils from a control school district in upstate New York. Program effect is demonstrated in two ways. First, Career Awareness students' CAI pretest scores were compared to scores they obtained after six and eighteen months of program participation, thereby providing a demonstration of growth in career awareness skills over time. In addition, mean scores obtained by Dade's Career Awareness pupils can be compared to the mean score obtained by the national norming group and thus providing an indication of how Dade's Career Awareness pupils fared in relation to the broader picture.

Table 1 shows that program participants did gain, substantially, in career awareness concept – particularly for the first six months they were in the program. While less dramatic, additional gains are apparent between the second and third testing period.

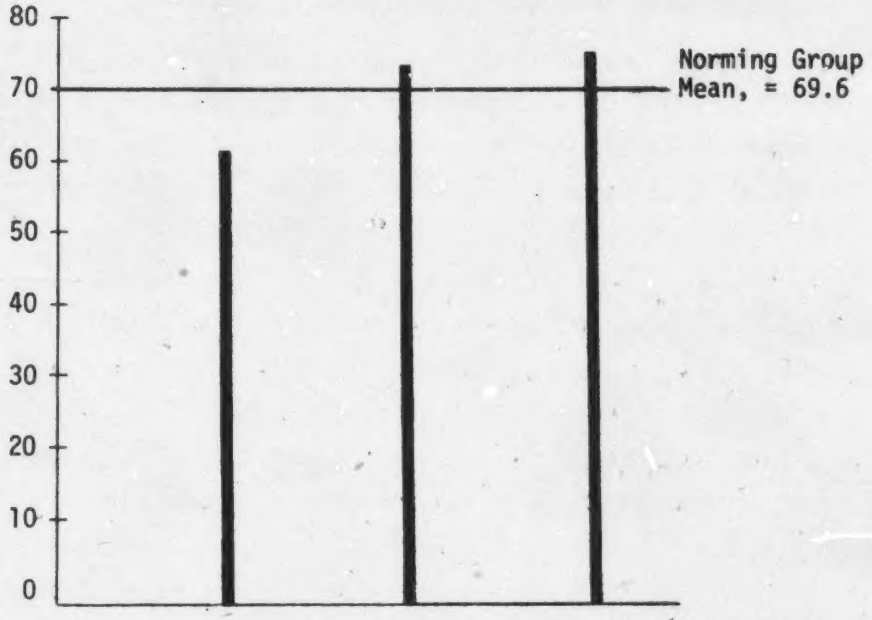
The table also indicates Dade County's Career Awareness pupils performed better after six months in the program than did the national norming group, and increased their lead on the norming group in the third testing.

TABLE 1

CAREER AWARENESS INVENTORY (FADALE)

TOTAL MEAN RAW SCORE COMPARISONS FOR THE PILOT

ELEMENTARY SCHOOL LEVEL CAREER AWARENESS PROGRAM PARTICIPANTS



MEAN	Mean = 62.3	Mean - 72.3	Mean = 73.3
NUMBER	(N = 372)	(N = 371)	(N = 218)
TEST DATE	(Sept., 74)	(Feb., 75)	(Feb., 76)

Tables 2 and 3 present results attained by the junior high school level Career Exploratory students on the John O. Crites Career Maturity Inventory. The inventory consists of two parts, a fifty-item Attitude Scale and a one hundred-item Competence Test. The Attitude Scale explores a student's attitudes toward making a career choice and entering the world of work. The Competence Test examines a student's knowledge about occupations and decisions involved in choosing a career.

Five junior high schools participated in this study. Three of them were the original Career Exploratory pilot schools and two of them were the new comprehensive junior high schools. Students from the Career Exploratory pilot schools were administered the (CMI) on three separate occasions, in September of 1975 (1), again in February of 1975 (2), and finally in February of 1976 (3). The comprehensive schools were opened in September of 1975; therefore, the inventory was administered only twice at those schools – first in September, 1975 (1), and again in February of 1976 (2).

Table 2 shows that Dade Career Exploratory students within both the pilot and comprehensive schools made gains on the Attitude Scale after six and again after eighteen months of program participation for the career awareness pilot schools, and after six months of participation for the comprehensive schools.

Crites* found a systematic increase in means across grade levels, thus indicating that maturation was accountable for a portion of the gains made by Dade Career Exploratory program participants. However, further examination of the pilot school results section of Table 2 indicates that Dade Career Exploratory pupils experienced a mean gain of 3.6 on the attitude scale between eighth and ninth grades, whereas the mean gain attributable to maturation alone between grades eight and nine was 1.5, thus indicating some success of the Career Exploratory program in improving attitudes of its participants toward making a career choice and entering the world of work.

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*Career Maturity Inventory, Theory and Research Handbook, John O. Crites, Ph.D. CTB/McGraw-Hill, 1973.

The table also shows that Dade's Career Exploratory pupils evidenced mean Attitude Scale scores at both grades eight and nine which were lower than those evidenced by the norming group. However, the greater rate of gain experienced by Dade's career pupils between grades eight and nine in relation to the gains made by the norming group over the same period of time demonstrates some program success in fostering growth in career-related attitudes.

TABLE 2

CAREER MATURITY INVENTORY (CMI) ATTITUDE TEST
TOTAL SCORE MEAN COMPARISONS FOR JUNIOR HIGH
CAREER EXPLORATORY PROGRAM PARTICIPANTS

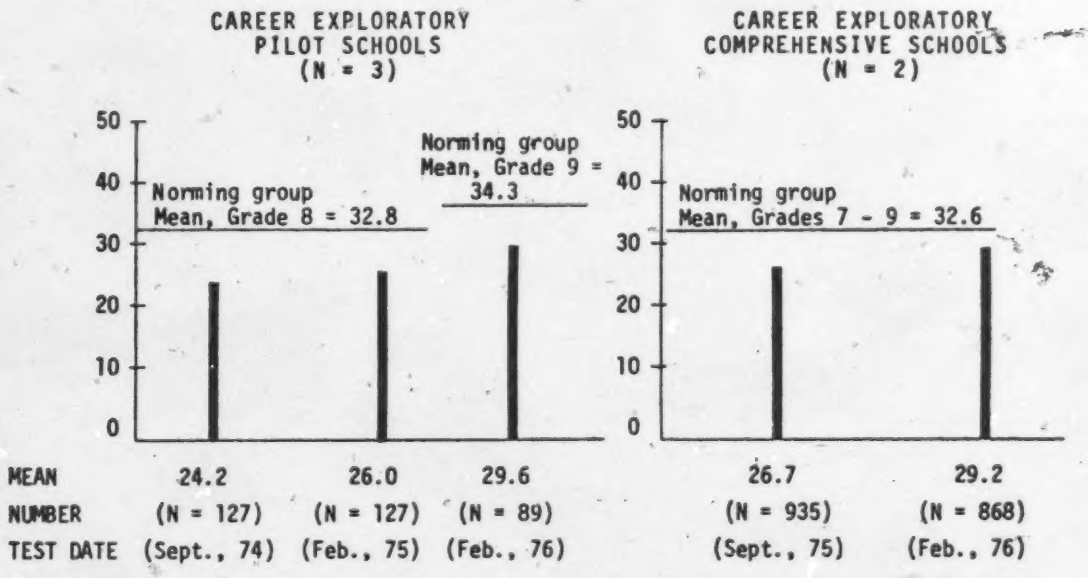


Table 3 presents comparisons of the means of the total (CMI) Competence Test scores achieved by the national norming group and the Dade County junior high school Career Exploratory program participants. The table presents data for two clusters of schools, the original three Career Exploratory pilot schools and the two new comprehensive junior high schools. It is evident from that table that program participants from both the pilot and comprehensive schools did experience gains between the pre-testing and the final post-testing situation.

Further examination of the data for the cluster of Career Exploratory pilot schools indicates peculiar test results for the second testing period. Specifically, pupils scored less well after six months of program participation than they did on the test taken prior to participation in the program. There is no readily apparent explanation for this phenomenon which did not manifest itself in the mean scores of the comprehensive school cluster.

It is also apparent from examining Table 3 that Career Exploratory students from both the pilot schools and the comprehensive schools had not attained the mean scores of the national norming group. This was after eighteen months of participation for the pilot school participants and six months participation for the students from comprehensive junior high schools.

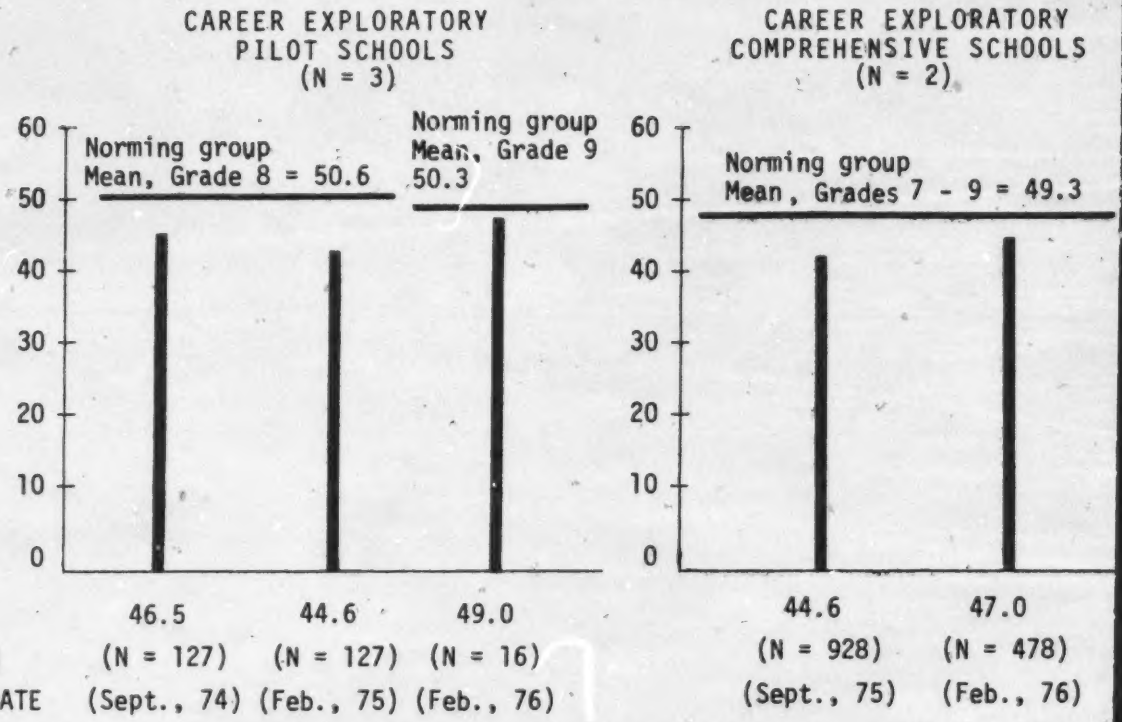
However, overall analyses of these results lead to the interpretation that the Career Exploratory program was somewhat effective in fostering growth in knowledge about occupations and decisions involved in choosing a career, as judged from the rates of gain on the norm being produced in Dade students.

TABLE 3

CAREER MATURITY INVENTORY (CMI) COMPETENCE TEST

TOTAL SCORE MEAN COMPARISONS FOR JUNIOR HIGH

CAREER EXPLORATORY PROGRAM PARTICIPANTS



MEAN	46.5	44.6	49.0	44.6	47.0
NUMBER	(N = 127)	(N = 127)	(N = 16)	(N = 928)	(N = 478)
TEST DATE	(Sept., 74)	(Feb., 75)	(Feb., 76)	(Sept., 75)	(Feb., 76)

Tables 4 and 5 present results attained by the eighth grade students who attended Dade's Career Exploratory pilot (N=3) and comprehensive (N=2) junior high schools on the Reading, Mathematics, Occupational Information and the Student Opinion and Attitude Poll tests of the Florida Statewide Eighth Grade Testing Program.*

The Florida Statewide Eighth Grade test is administered each February to nearly the entire eighth grade population in the State. Approximately 18,500 students were tested in Dade County. Within Tables 4 and 5 Career Exploratory school results are compared to results attained by the total Dade eighth grade students as well as to the results achieved by eighth grade students throughout the State of Florida.

Table 4 presents comparative results obtained by Career Exploratory, Total Dade County and Total State eighth grade students on the Reading, Mathematics, and Occupational Information tests. It is evident from examining that table that eighth grade students from the Career Exploratory schools performed slightly better than Dade County eighth grade students as a whole on all three tests, Reading, Mathematics and Occupational Information.

Also, Table 4 shows that Career Exploratory students scored less well than did eighth grade students statewide on the Reading and Occupational Information tests. Math score results present a different picture in the table where it is demonstrated that students from Career Exploratory schools scored higher on the math test than eighth grade students countywide or statewide.

These results tend to indicate slight favorable career development program influence on basic reading and mathematics skills performance and on occupational information gained, as well.

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*For an extensive overview of the Florida Eighth Grade Testing Program refer to Florida State-Wide Eighth-Grade Testing Programs, 1975-76, Dade County Public Schools, Miami, Florida.

TABLE 4

FLORIDA STATEWIDE EIGHTH GRADE TESTS
MEAN TOTAL SCORE RESULTS
NORM REFERENCED TESTS

	TOTAL READING		TOTAL MATHEMATICS		TOTAL OCCUPATIONAL INFORMATION	
EXAMINEES	MEAN	NUMBER	MEAN	NUMBER	MEAN	NUMBER
PILOT AND COMPREHENSIVE SCHOOL DADE CAREER EXPLORATION STUDENTS GRADE 8	33.73	2,158	47.67	2,185	26.71	2,174
TOTAL DADE GRADE 8 STUDENTS	33.17	18,207	45.71	18,199	26.23	18,284
STATE GRADE 8 STUDENTS	35.77	118,120	46.34	118,452	27.87	123,308

Table 5 presents results attained on the Student Opinion and Attitude Poll test of the Florida Eighth Grade Testing Program. As part of the Florida Eighth Grade Program, pupils were asked (not required) to respond to approximately one hundred attitude or opinion type items. Responses to six of those items are summarized in Table 5 for Career Exploratory school, total Dade and State eighth grade students.

For purposes of this report, items were selected that relate to areas that were anticipated as being affected by participation in the Career Exploratory program. Statewide and countywide responses to the selected six items are reported in Table 5 as background material.

Essentially, Dade's total eighth grade population responded much the same way to the items as did the statewide eighth grade population. However, with the exception of item six in Table 5, response patterns were different and more positive for students from the Career Exploratory schools than they were for eighth grade students countywide or statewide. Further examination of this table demonstrates that positive differences in favor of Career Exploratory school examinees consistently occurred at the extreme positive end of the response set continnum.

Specifically, when responding to the question "How well is your school teaching about different kinds of occupations?", thirty-eight percent of the students from Career Exploratory schools responded very well as opposed to twenty percent response from students countywide and twenty-one percent statewide. This finding is indicative that students are aware of the program and, in general, feel the school is doing a good job of teaching.

School morale was another factor which was anticipated as possibly being affected by participation in Career Exploratory activities. Pride felt about one's school (item 2) and perceived friendliness of one's fellow students (item 3) were the two items selected to be representative of this factor. Examination of items two and three, as tabled, evidence a strong positive difference in favor of the Career Exploratory school students in the "very proud" category of item two and a slight but positive difference in favor of the program schools in the "very friendly" category of item three.

Instructional methodology was a third factor anticipated as being affected by the Career Exploratory programs. Item four which addresses the role of the teacher in demonstrating the usefulness of instructional activities, certainly a prerequisite of the program, shows thirty-five percent of the program respondents felt teachers were able to show the usefulness of curricula "most of the time" in relation to thirty percent for eighth grade students countywide and thirty-one percent statewide.

Another basic objective of the program was to increase interest in program activities by lessening the amount of time teachers used the lecture method while at the same time providing an instructional program which would afford greater student participation. Examination of items four and five shows that was indeed the case. Students from the program schools felt the lecture method was used less often in both their reading and mathematics classes than did eighth grade students countywide or statewide. Further examination of items four and five show greater emphases were placed on the discussion method in English classes and individualized instruction within the mathematics classes for students in program schools than were evidenced in schools countywide or statewide. These findings are indicative of program success in altering instructional method patterns in both the reading and mathematics curriculum areas.

TABLE 5

FLORIDA STATEWIDE EIGHTH GRADE TESTING PROGRAM

STUDENT OPINION AND ATTITUDE POLL - 1976

PERCENT OF PUPIL RESPONSES

	QUESTIONNAIRE ITEM	PERCENTAGE OF PUPILS RESPONDING		
		STATE EIGHTH GRADE STUDENTS	TOTAL DADE EIGHTH GRADE STUDENTS	DADE CAREER EXPLORATORY STUDENTS EIGHT GRADE
		%	%	%
1	How well is your school teaching about different kinds of occupations?			
	A: Very well	21	20	38
	B: Well enough	39	35	35
	C: Not well enough	31	34	16
2	How proud are you of your school?			
	A: Very proud	26	23	33
	B: Fairly Proud	41	40	36
	C: Not too proud	20	23	19
	D: Not proud at all	11	12	10
3	How do you rate the friendliness of the students in your school?			
	A: Very friendly	17	16	18
	B: Friendly	63	61	62
	C: Unfriendly	12	14	13
	D: Very unfriendly	6	7	6
4	How often do your teachers show the usefulness of what you learn in school?			
	A: Most of the time	31	30	35
	B: Sometimes	40	39	39
	C: Hardly ever	17	18	16
	D: Never	9	9	7
5	Which method is used most often in your English classes?			
	A: Lecture	45	42	37
	B: Individual	21	22	22
	C: Discussion	26	25	29
	D: Lab	4	6	7
6	Which method is used most often in your Math classes?			
	A: Lecture	40	34	29
	B: Individual	31	36	43
	C: Discussion	28	17	15
	D: Lab	4	6	6

*The percentage response for the students from Dade Career Exploratory schools [pilot (3) and comprehensive (2)] are meaningfully different.

Table 6 presents the comparative results attained by the Career Exploratory students (treatment group) and a matched group of non Career Exploratory students (control group) on the Communication Skills Tests of the Ninth Grade - Florida Statewide Assessment Program.*

The purpose of this table is to provide information relative to the effects on student communication skills achievement as a consequence of having participated in language arts curricula which were generated by the Career-Related Language Arts Programs project. The overall goal of this curriculum project was to improve student performance in the basic skills of reading and writing -- to levels higher than expectations produced by traditional curricula and methods.

Since the career-related language arts programs are based on the use of individualized learning activity packages (four in number) for each communications program, the achievement instrument used to measure the objectives attained in each "quin" program was to be a criterion-referenced measure. Also, since the programs were written around the 1974-75 Florida Statewide Assessment Program - communications skills objectives for ninth grade achievement, that test was selected as the standardized test to measure the success of the program.

At the pilot and comprehensive schools, the achievement test (Florida Statewide Assessment Test Communication Skills Section) was administered by the Department of Evaluation staff on two consecutive days to a group of ninth graders at each school. The treatment group was chosen from all of the students who had had one or more quins of career-related language arts from a list made up by teachers of all children in the program. A control group was selected from all other ninth graders not having taken a career-related language arts program; each control group member was matched by stanine level to a member of the treatment group, the stanines being determined by countywide Stanford Achievement reading test scores attained prior to career development program participation.

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*The Florida Statewide Assessment Program for ninth grade pupils was discontinued in 1974. However, with the State's permission, the test was administered locally within the Career Exploratory schools in March of 1975.

In response to the question of effect of the program on student achievement, the data indicate student achievement in communication skills was somewhat higher for program participants (treatment group members) than for non-career Exploratory program students. This finding was evidenced within each of the pilot and comprehensive Career Exploratory schools and across all of those schools. The results evidenced in Table 6 demonstrate that the Career Related Language Arts Program was a successful alternative to the focus and methodology of the traditional language arts program offered in those schools.*

TABLE 6

FLORIDA STATEWIDE ASSESSMENT PROGRAM

COMMUNICATION SKILLS - TOTAL

GRADE 9

MARCH, 1976

		MEAN RAW SCORE AND PERCENT CORRECT					
		PILOT SCHOOLS			COMPREHENSIVE SCHOOLS		
		R.E. LEE	MAYS	ROCKWAY	W.R.THOMAS	L. STEVENS	TOTAL CAREER EXPLORATORY SCHOOLS
TREATMENT GROUPS	Mean Correct	61.4	72.3	87.8	72.6	67.1	74.5
	Percent Correct	57%	68%	82%	68%	63%	70%
	Number Pupils	36	31	89	67	71	294
CONTROL	Mean Correct	54.6	70.4	83.3	69.9	63.5	70.6
	Percent Correct	51%	66%	78%	65%	59%	66%
	Number Pupils	36	31	89	67	71	294

Note: The Florida Statewide Assessment Program for ninth grade pupils was discontinued in 1974. However, with the State's permission, the test was administered locally within the Career Exploratory schools in March of 1976.

*The Career Exploratory program also contains a career-related mathematics component. Personnel involved with the development and implementation of this component analyzed some preliminary achievement data for trends in program impact. The data are suggestive of program potential, but no control group was utilized so the results are not definitive. (These data are presented in Appendix B).

Tables 7 and 8 present results attained by the Career Exploratory students in a series of tests assessing actual knowledge gained in the various quinmester Exploratory courses.

Each student received two tests upon entering one of the quinmester courses and again upon its completion. The first of these tests consisted of 40-80 items (depending upon which course the student was entering). From these 40-80 items, 10-item subtests were constructed and given to students on a matrix-sampling basis. That is, no student received the total test assessing knowledge of the Career Exploratory course; instead, each pupil received a 10-item sample of the total test. Program effectiveness was determined by pooling the results of all the students where subtests included identical items, so that a percent pass on each of the total test items became possible when all of the students in the course were pooled. The gains in percent passing an item from the pre-course to the post-course conditions served as one of the indicators of program effectiveness.

In addition to the subtests assessing knowledge gained while a participant in a given Career Exploratory quin, each pupil also took a second test composed of 10 items drawn from the tests used in quins other than the one he/she was taking. The gains made in percent correct on each of this test's items were used as a "control" against which the gains made in the quin of enrollment could be compared, since maturation, alone, might be expected to produce some gains in the test scores, without there necessarily being a program effect. Program effect would be clearly spotlighted, however, when the gains made in scores drawn from tests appropriate to a specific course were substantially higher than gains made in tests which were inappropriate for that specific course.

Table 7 shows the combined appropriate test gains (across all the courses) compared to the gains made in the inappropriate tests. It is clear from that table that greater gains were made in the appropriate tests. The post-course situations produced an average gain of 13 percent points, while only three percent improvement was noted for the inappropriate tests (called "Non-Quin Related Tests" in the table).

The table also indicates that students, enrolled in a given quinmester, generally had more advanced knowledge concerning the content of their particular quins than they had for the contents of courses not currently being taken by them. This can be seen in the fact that the average pre-test score for the quin-related tests was 34 percent correct, while 20 percent was the average correct response rate attained by the students in items drawn from other course tests.

The table provides a comparison on a by-school basis of the results for the previously established pilot schools and the two new comprehensive junior high schools. The average gains made were slightly greater in the pilot schools (13 percent gain as opposed to nine percent gain), perhaps due to the longer period of time the pilot schools have had to implement the career quins.

Table 8 shows how boys compare to girls in each of the Career Exploratory quins (average across all five of the junior high schools). Several things are of interest in this table.

The first of these is the overall finding that the boys and girls made approximately equal average gains in the quins, about 13 percent points. On a quin-by-quin basis, however, boys generally showed higher initial scores and usually made slightly greater gains while in the quins.

A second finding of interest is that the students in the Business Career Exploratory quin made the greatest gains, 18 percent for the boys and 16 percent for the girls. This particular test also was the one in which students scored their best entry scores, suggesting the possibility that the test was less difficult than the ones used in the other quins (a possibility that might explain the greater gains realized).

Finally, the table indicates that boys are finding their way into career explorations which have traditionally been feminine, while girls are entering the exploration of previously male-dominated careers. While the numbers of such students are not always high, the goal of providing a non-sex stereotyped exploration program is seemingly reflected in the 78 girls who completed the Mechanics quin and in the 59 boys who finished the Home-Economics Career Exploratory course.

TABLE 7

COMPARISONS OF GAINS MADE BY CAREER QUINS STUDENTS
IN COURSE TESTS AND NON-COURSE RELATED TESTS IN PILOT AND COMPREHENSIVE
CAREER EXPLORATORY JUNIOR HIGH SCHOOLS

	CAREER EXPLORATORY PILOT SCHOOLS				CAREER EXPLORATORY COMPREHENSIVE SCHOOLS			TOTAL *
	SCHOOL A	SCHOOL B	SCHOOL C	AVERAGE*	SCHOOL 1	SCHOOL 2	AVERAGE *	
QUIN-RELATED TEST GAINS								
Pretest Percent Correct	32	31	39	34	35	37	36	34
Post-test Percent Correct	45	44	54	48	40	50	45	47
Gain (Percent Correct)	+13	+13	+15	+14	+ 5	+13	+ 9	+13
NON-QUIN RELATED TEST GAINS								
Pretest Percent Correct	20	20	21	20	20	22	21	20
Post-test Percent Correct	21	22	25	23	22	26	24	23
Gain (Percent Correct)	+ 1	+ 2	+ 4	+ 3	+ 2	+ 4	+ 3	+ 3
NUMBER OF STUDENTS TESTED Pre	486	542	559		509	509		2605
NUMBER OF STUDENTS TESTED Post	456	474	492		435	496		2353

*Gain scores are weighted averages

Table 9 presents results attained by Career Exploratory students in the administration of a Student Attitude Questionnaire* in February of 1976.

The majority of the program participants liked the idea of going through different Career Exploratory courses (item one). Students also felt the programs had been useful to them in gaining information about jobs and future schooling (items four and six). Although the majority of the program participants, eighty percent, indicated they would be willing to enroll in more Career Exploratory courses (item two) they were less enthusiastic about spending an additional quin in the same course (item three).

Items seven and eight in Table 9 address the problem of the difficulty of the reading levels of the Career Exploratory program materials. Here too, the majority of the students, seventy percent, felt they could read the materials without any difficulty. Interestingly, however, seventy percent of them also indicated they would like to have more illustrations in their reading materials.

In general, the above findings indicate Career Exploratory program students enjoyed the courses they had taken. They also felt the courses had been beneficial to them and indicated they would be willing to take additional career exploratory courses if given the opportunity.

*A copy of the Career Exploratory Student Questionnaire is included as Appendix C.

TABLE 8

COMPARISONS OF GAINS MADE BY BOYS AND GIRLS IN
CAREER EXPLORATORY QUIN TESTS

QUIN	ELECTRONICS			GRAPHICS			MECHANICS			SALES AND MARKETING			HEALTH			HOME-ECON.			BUSINESS			CONSTRUCTION			TOTAL *		
	Pre%	Post%	Diff.	Pre%	Post%	Diff.	Pre%	Post%	Diff.	Pre%	Post%	Diff.	Pre%	Post%	Diff.	Pre%	Post%	Diff.	Pre%	Post%	Diff.	Pre%	Post%	Diff.	Pre%	Post%	Diff.
BOYS	29	39	+10	33	45	+12	30	43	+13	33	40	+ 7	35	49	+14	37	44	+ 7	41	59	+18	42	65	+13	34	47	+14
N	287	285		303	273		353	339		22	26		97	99		125	59		211	212		202	189		1600	1482	
GIRLS	27	35	+ 8	33	43	+10	27	36	+11	30	36	+ 6	36	49	+13	39	44	+ 5	43	59	+16	31	44	+13	35	47	+12
N	115	93		158	132		97	78		43	29		148	147		179	131		222	230		43	31		1005	871	
TOTAL *	28	38	+10	33	44	+11	29	41	+13	31	38	+ 7	36	49	+13	38	44	+ 6	42	59	+17	40	53	+13	34	47	+13
N	402	378		461	405		450	417		65	55		245	246		304	190		433	442		245	220		2605	2353	
TOTAL * NON-QUIN RELATED TESTS	20	22	+ 2	20	24	+ 4	22	24	+ 2	19	20	+ 1	21	24	+ 3	20	20	+ 0	19	23	+ 4	21	22	+ 1	20	23	+ 3

*Total scores are weighted averages.

TABLE 9

STUDENT ATTITUDE SURVEY

JUNIOR HIGH SCHOOL CAREER EXPLORATORY COURSES

GRADE LEVELS 7-9 - PILOT AND COMPREHENSIVE SCHOOLS

(N = Approximately 2000)

CAREER CLUSTERS	PERCENT POSITIVE ANSWERS								
	Do you like the idea of going through different Career Exploratory courses?	Do you intend to enroll in any more Career Exploratory courses?	If you had the chance, would you go back into another quin in the same course?	Do you feel that the Career Exploratory program will enable you to make better choices and decisions in high school?	Do you want to study more about other careers?	Do you feel that you have learned useful career information about jobs and your future schooling?	Do you feel that you can read the materials without any difficulty?	Do you feel that you would like to have more illustrations in your reading materials?	Select a choice that represents how your friends would rate these Career Exploratory courses.
Graphic Arts & Allied Occupations	92	79	66	86	89	87	67	68	69
Mechanical & Allied Occupations	93	89	69	89	86	85	71	70	95
Business & Allied Occupations	95	82	67	90	90	89	70	70	97
Construction, Building Maintenance & Allied Occupations	93	87	69	91	89	90	69	75	95
Electronics & Allied Occupations	93	82	64	89	86	85	67	71	97
Manufacturing & Allied Machine Occupations	93	81	65	93	81	91	74	74	95
Home Economics & Allied Industrial Occupations	96	85	67	87	89	87	71	73	98
Health & Allied Occupations	97	74	65	87	87	87	71	61	100
Agriculture & Allied Occupations	75	75	63	75	75	63	63	75	86
Sales & Marketing Occupations	88	88	44	88	83	75	79	58	91
TOTAL - All Above Listed Occupations	**92**	**82**	**64**	**88**	**86**	**84**	**70**	**70**	**92**

APPENDIX A

COST ANALYSES OF CAREER EDUCATION PROGRAMS

The analysis of costs of the Career Education Programs in the Dade County Public Schools is presented in four parts:

1) Costs of operating the Elementary Career Awareness program in the seven pilot schools and ten schools where the program was established during 1975-76.

2) Costs of operating the Junior High Career Exploratory program in the three pilot and two newly constructed schools.

3) Costs of operating the Career Related Language Arts and Mathematics programs, and

4) Costs of remodeling and equipping the elementary career labs established during 1975-76 and equipment costs of Junior High career labs at new schools.

School-based instructional personnel costs were not considered in arriving at a cost per student. In the Elementary Career Awareness program, all schools (except Drew Elementary) employed one teacher assistant at an average annual salary of $6,860. Drew Elementary employed one teacher and one assistant at a total cost of $21,755. The Junior High Career Exploratory used one teacher (average salary $14,890) in each of the labs. The salaries of personnel employed in junior high labs are paid from funds generated under the vocational educational programs of the Florida Educational Finance Program (FEFP) which is subject to a statutory enrollment cap. The regular English and Math teachers were used in the teaching of Career Related Language Arts and Math programs. The instructional personnel costs attributable to these programs are approximately equivalent to one full-time teacher's salary ($14,890 per year) for each unit of 600 students.

The new programs established at additional school locations during 1975-76 were, in most cases, not fully operational when this analysis was prepared. The costs indicated for these schools were therefore based on the design capacity of the labs and projected annual expenditures.

CAREER EDUCATION PROGRAM COST ANALYSIS
Junior High Career Exploratory
Estimated 1975-76 Operating Costs*

Career Laboratory (Number of labs)	Supplies	Travel*	Staff & Curr. Development and Admin.**	Total Costs	Number of Students	Average Cost per Student
Total Costs of Three Pilot Schools (Mays, Rockway, J. R. E. Lee):						
Agriculture and Allied (1)	$ 1,020	$ 20	$ 1,310	$ 2,350	420	$ 5.59
Business and Allied Office (3)	1,380	60	3,930	5,370	1,340	4.01
Construction and Manufacturing(2)	4,200	40	2,620	6,860	1,220	5.62
Electronics and Allied(3)	4,800	60	3,930	8,790	1,780	4.93
Graphic Arts and Allied(3)	4,200	60	3,930	8,190	1,520	5.38
Health and Allied(3)	2,100	60	3,930	6,090	1,420	4.29
Home Economics and Allied Ind.(3	4,800	60	3,930	8,790	1,340	6.56
Mechanical and Allied (3)	3,500	60	3,930	7,490	1,910	3.92
Employability Skills (1)	440	20	1,310	1,770	480	3.68
Sales and Marketing (1)	620	20	1,310	1,950	480	4.06
	$27,060	$ 460	$30,130	$57,650	11,910	$ 4.84
Total Costs of Two New Schools (W. R. Thomas and Lake Stevens):						
Business and Allied Office(2)	$ 6,600	$ 40	$ 2,620	$ 9,260	1,200	$ 7.72
Construction and Manufacturing(2	5,900	40	2,620	8,560	1,200	7.13
Electronics and Allied(2)	4,150	40	2,620	6,810	1,200	5.68
Graphic Arts and Allied	5,400	40	2,620	8,060	1,200	6.72
Home Economics (2)	3,700	40	2,620	6,360	1,500	4.24
Mechanical and Allied (2)	3,100	40	2,620	5,760	1,500	3.84
Employability Skills (2)	1,900	40	2,620	4,560	1,200	3.80
	$30,750	$ 280	$18,340	$49,370	9,000***	$ 5.48

*Does not include school-based instructional personnel costs. Each of the Career Labs employed a full-time teacher ($14,890).

**County Office staff expenses, prorated among the schools based on number of Career Labs in each school.

***For new schools, total program capacity was used instead of actual student membership in computing average cost per student.

CAREER EDUCATION PROGRAMS COST ANALYSIS
Elementary Career Awareness
Estimated 1975-76 Operating Costs*

School	Supplies	Travel	Staff & Curriculum Development and Admin**	Total Costs	Number of Students	Average Cost per Student
Pilot Programs:						
Little River	$ 200	$ 40	$ 2,590	$ 2,830	345	$ 8.20
Drew	300	40	2,590	2,930	450	6.51
Caribbean	200	60	2,590	2,850	200	14.25
Parkway	200	60	2,590	2,850	250	11.40
Bryan	200	60	2,590	2,850	280	10.18
Sunset Park	200	50	2,590	2,840	300	9.47
Orchard Villa	200	40	2,590	2,830	350	8.08
	$ 1,500	$ 350	$ 18,130	$19,980	2,175	$ 9.19
New Programs Established During 1975-76***						
Blanton	$ 600	$ 50	$ 2,590	$ 3,240	300	$10.80
Floral Heights	600	40	2,590	3,230	300	10.77
Goulds	600	50	2,590	3,240	300	10.80
Kensington Park	600	40	2,590	3,230	300	10.77
Lake Stevens	600	50	2,590	3,240	300	10.80
Leewood	600	40	2,590	3,230	300	10.77
Martin	600	40	2,590	3,230	300	10.77
North Beach	600	40	2,590	3,230	300	10.77
Palm Lakes	600	50	2,590	3,240	300	10.80
Young	600	50	2,590	3,240	300	10.80
	6,000	$ 450	$ 25,900	$32,350	3,000	$10.78

* Does not include school-based instructional personnel costs. Drew Elementary employed a teacher and an assistant ($21,755) while all other schools employed one assistant ($6,860).

** County Office staff expenses, prorated equally among the schools.

*** Programs not yet fully operational; costs based on design capacity and assumes operations for full year.

CAREER EDUCATION PROGRAM COST ANALYSIS
Career Related Language Arts and Mathematics
Estimated 1975-76 Operating Costs*

School	Supplies	Travel	Staff & Curr. Development and Admin.**	Total Costs	Number of Students	Average Cost per Student
Career Related Language Arts:						
Mays Jr.	$ 1,270	$ 85	$ 10,780	$12,135	3,920	$ 3.10
Rockway Jr.	1,170	85	5,970	7,225	2,170	3.33
Thomas Jr.	795	85	3,135	4,015	1,140	3.52
Lake Stevens Jr.	930	85	2,170	3,185	790	4.03
Lee Jr.	1,010	85	1,730	2,825	630	4.48
	$ 5,175	$ 425	$ 23,785	$29,385	8,650	$ 3.40
Career Related Math:						
Mays Jr.	$ 655	$ 90	$ 6,950	$ 7,695	780	$ 9.87
Rockway Jr.	105	40	540	685	60	11.42
Thomas Jr.	905	90	20,140	21,135	2,260	9.35
Lee Jr.	560	90	1,890	2,540	212	11.98
	$ 2,225	$ 310	$ 29,520	$32,055	3,312	$ 9.68

* Does not include school-based instructional personnel costs of approximately one teacher ($14,890) for each unit of 600 students.

** County Office staff expenses, prorated on the basis of number of students participating in the program at each of the schools.

CAREER EDUCATION PROGRAM COST ANALYSIS
Estimated Cost of Establishing New Career Labs
(1975-76)

Elementary Career Labs Scheduled to be Established During 1975-76

School	Remodeling	Equipment	Total
Blanton	-	$ 6,000	$ 6,000
Floral Heights	$ 2,900	6,000	8,900
Goulds	2,600	6,000	8,600
Kensington Park	2,900	6,000	8,900
Lake Stevens	-	6,000	6,000
Leewood	-	6,000	6,000
Martin	5,100	6,000	11,100
North Beach	7,500	6,000	13,500
Palm Lakes	325	6,000	6,325
Young	460	6,000	6,460
	$ 21,785	$ 60,000	$ 81,785

Cost of Equipping Two New Junior High Schools: W.R. Thomas and Lake Stevens

Career Lab	Expenditures
Business and Allied Office	$ 36,000
Construction and Manufacturing	64,000
Electronics and Allied	28,000
Graphic Arts and Allied	68,000
Home Economics and Allied Ind.	39,600
Mechanical and Allied	44,000
Employability Skills	18,400
	$ 298,000

APPENDIX B

MEMORANDUM

TO: Dr. Phillip Spieth
Supervisor
Evaluation Studies

FROM: Mr. Lyndol R. Lewis
TSA, Career Exploratory Mathematics

RE: Results of the Standardized Testing of Career Exploratory Mathematics Students, Quin 1, 1975

Students involved in Career Exploratory Mathematics programs were pre- and posttested with the Standford Achievement Test, Advanced, Forms A and B, Computational section. The rationale was to gain an objective evaluation of program materials through a comparison of student scores (as grade equivalents). However, it was believed that the students would score below their capability on the pretest due to the summer vacation period. Therefore, the comparison has been made between the May '75 Standarized Test Scores and those of the posttest (November 3, 1975). Below are the results of that comparison.

School	# Students - Both Scores Were Available	Average Grade Equivalent - May '75 Test	Average Grade Equivalent - Nov. '75 Test	Aver. Increase (Growth) In One Quin	Total Increase (All stu.)
Mays	54	7.198	7.650	+.452 yrs.	24.4 yrs.
W. R. Thomas	119	7.539	8.020	+.482 yrs.	57.3 yrs.
Robert E. Lee	14	7.943	7.914	-.029 yrs.	-.4 yrs.
	187				81.3 yrs.

NOTE: Average increase (growth) for all students tested = .435 yrs. in one quin.

March 2, 1976

MEMORANDUM

TO: Dr. Phillip Spieth
Supervisor
Evaluation Studies

FROM: Mr. Lyndol Lewis
TSA
Career Exploratory Mathematics

RE: TESTING, CAREER EXPLORATORY MATHEMATICS

Below is a tabulation of the students tested by grade level and school:

School	7	8	9	Total
MAYS	0	15	39	54
THOMAS	29	69	21	119
LEE	0	0	14	14
Total	29	84	74	187

During the selected testing period seven teachers were involved. Of these only one had previous experience teaching the program, and one had three days of inservice training. The other five learned as they taught.

The students involved were all new to the program. There were approximately 220 students enrolled in the programs during quin 1. Of these, 187 had both May '74 May '75 and posttest scores. There are currently just over 900 students enrolled in CEM programs at four schools.

M E M O R A N D U M

July 7, 1976

TO: Dr. Phillip Spieth, Supervisor
Evaluation Studies

FROM: Mr. Lyndol Lewis, TSA
Career Exploratory Mathematics

SUBJECT: RESULTS OF STANDARDIZED TESTING OF CAREER EXPLORATORY MATHEMATICS STUDENTS AT ROBERT E. LEE JUNIOR HIGH SCHOOL, QUIN I, 1975

The Robert E. Lee data was adversly affected by the death of the regular classroom teacher--(September, 1975) and the ensuing replacements, first by a temporary substitute teacher and then by a regular substitute teacher. Neither of the replacement teachers received any type of formal (or inservice) training related to the concepts or classroom management of the Career Exploratory Mathematics Program.

LL:nr

APPENDIX C

CAREER EXPLORATORY STUDENT QUESTIONNAIRE

SCHOOL _____ cc 8-12 AGE ___ cc 26-27 SEX ____ cc 28

GRADE _____ cc 29-30

Check the current Career Exploratory courses that you are taking:

Careers in:	Graphic Arts & Allied Occupations	____ cc 31
	Mechanical & Allied Occupations	____ cc 32
	Business & Allied Occupations	____ cc 33
	Construction, Building Maintenance & Allied Occupations	____ cc 34
	Electronics & Allied Occupations	____ cc 35
	Manufacturing & Allied Machine Occupations	____ cc 36
	Home Economics & Allied Industrial Occupations	____ cc 37
	Health & Allied Occupations	____ cc 38
	Agriculture & Allied Occupations	____ cc 39
	Criminal Justice System	____ cc 40
	Fine Arts & Allied Occupations	____ cc 41
	Sales & Marketing	____ cc 42

DIRECTIONS: Circle "Yes" or "No" or Circle one of the five numbers.

In regards to the Career Exploratory programs in your school:

1.	Do you like the idea of going through different Career Exploratory courses?	Yes	No	cc 43
2.	Are you now in a Career Exploratory course(s)?	Yes	No	cc 44
3.	Do you intend to enroll in any more Career Exploratory courses?	Yes	No	cc 45
4.	If you had the chance, would you go back into another quin in the same course?	Yes	No	cc 46
5.	Do you feel that the Career Exploratory program will enable you to make better choices and decisions in high school?	Yes	No	cc 47
6.	Do you want to study more about other careers?	Yes	No	cc 48
7.	Do you feel that you have learned useful career information about jobs and your future schooling?	Yes	No	cc 49
8.	Do you feel that you can read the materials without any difficulty?	Yes	No	cc 50
9.	Do you feel that you would like to have more illustrations in your reading materials?	Yes	No	cc 51

		Very Good	Good	Average	Poor	Very Poor	
10.	Select a choice that represents how your friends would rate these Career Exploratory courses.	1	2	3	4	5	cc 52

ADDITIONAL COMMENTS: _____

_____

_____

MIS-20527 (10-75) Rev.